NATURAL BLUE PRINTS

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It is maintained, that this earth is a general factory, heated, lighted, ventilated and stored with raw material awaiting the elaboration of man—the operative—and that the disorder, confusion and suffering in the world is due to the fact that he, although possessing the power to do so, has not yet read the blue prints prepared for him by the Great Architect.

It is maintained, that upon everything is written its purpose and that this writing constitutes the blue prints, that is, nature's statutes or laws for the guidance of mankind upon the face of the earth and in the universe at large. Instead of shouting orders from the clouds or furnishing paper blue prints, such as we are familiar with, to the operatives in this great general factory, the Creator adopted the unique plan of impressing upon everything its purpose. Inasmuch as these written purposes, blue prints, impressions, natural statutes or laws, by whichever name they may be called, can be read by us and our successors upon this sphere, it is evident, that, to say the least, a vast amount of shouting and paper is saved by this unparalleled arrangement. It is equally evident that inasmuch as man has been given the power to read these blue prints, that the Creator will not read them for him or

shout his orders from the clouds; as a corollary, it is equally evident that the disorder and suffering in this world will continue until man himself reads them and applies himself to them; and that many of his prayers are made in vain.

It is maintained, that man was not called into the factory until everything was in readiness for him to proceed with his work, for the reason that there was before that time nothing that he could do. In fact, he could not have inhaled the gases floating about during the formative period of this factory, and lived. Man, in all his powers and necessities is an exact counterpart or complement of the more general plan previously formulated and executed when the earth was built. It is maintained, therefore, that man's effort at law making, and religion making, except wherein he has read and paralleled these blue prints of Nature, have been and are, vain. It is apparent, now, that his duty requires him to at least, gradually discontinue his efforts along these lines and take nature into his confidence. The basic truth, namely, "Upon everything is written its purpose" should be Article I, in his political constitution, and with that truth ever in mind, he should pass laws in harmony with it for the purpose of enforcing its truths upon mankind, mindful of the probability that at some future day nature will receive such full confidence of mankind in general that even this limited law-making will be unnecessary.

Man is an evolving creature, physically and

mentally. A survey of the past shows very clearly that his evolution, that is, physical and mental unfolding and progression, have taken rapid strides upon every occasion when he has individually or collectively taken nature into his confidence. His dark days have been, so to speak, artificial or man-made days. We can see the horizon of his dark morning of life ever brightening as some noble truth-seeking spirit read into the life of mankind a page, a paragraph or a whole chapter in nature. The more he reads, the greater the brightening. Thus our confidence in nature has been buttressed by experience. Whatever has been man's failures in the past it is now his clear duty and privilege, if you please, to at least gradually, turn the whole matter over to nature, that is, turn ourselves over to her by sinking ourselves in her—by reading into our lives an ever-increasing number of her chapters. For we can, at this time, understand her and see that she has furnished us with blue prints for our guidance that are so legible that anyone "who runs may read."

It is maintained, that this basic truth, viz., "Upon everything is written its purpose," is a scientia scientiarum, a science of the sciences, a truth to which all other truths are subsidiary. It is the major premise of existence and by its light we see that religion and science are one. It implies the thinking of the Creator's thoughts after Him than which, nothing can be more worshipful, spiritual, useful, or beautiful. It is get-

ting "right with God."

If you had to erect and operate a factory, say for the manufature of stoves, what is the first thing you would do before commencing your work? Sensible men that you are, you would first formulate plans according to which the building was to be erected and the business of manufacturing carried on. In these plans you would provide for at least a room in which to store the iron, another room for the fuel, still another for the moulding sand, a casting room, a room for cleaning the castings, and a room within which to assemble them. You would, in short, picture before your mind's eye the busy factory complete and anticipate every necessity and convenience for the proper conduct of the business of manufacturing stoves. Having all this in mind, you would prepare the blue prints, according to which the factory was to be built. Factory built, and stocked with raw material and fuel, what would be the next thing you would do? Sensible men that you are, you would consider very carefully the multitudinous operations that would have to be carried on to make stoves and then provide the factory with blue prints for the direction of the operatives. Blue prints in the hands of operatives, you would consider absolutely essential. For you could not allow each man to follow his own caprice in the manufacture of these stoves. I emphasize the statement by saying that you would provide these blue prints as a matter of course.

These plans or blue prints furnished for the guidance of the operatives would be mere complements of the original plans according to which the factory was built. Next, again having in mind the multitudinous operations that would have to be carried on to make stoves, you would provide the factory with operatives pospessing, as a whole, the various mental and physical attainments that would correspond with the work to be done.

But suppose that you are not so sensible as I give you credit for being; suppose that you did not trouble yourself about plans or blue prints for your factory and gave no thought to the quality of the material used in its construction, to the manner of its construction, the arrangemen of its rooms to meet the necessity and convenience of the operations to be carried on, or to the storage of unwrought materials. What sort of a hodge-podge of a factory would you have? But suppose that into this caricature of a factory were called a lot of nondescript men who knew nothing about and could not know anything about making stoves, and suppose that they were left to scramble for a living within its walls, without any plans to guide them. What kind of stoves would you get? Would you expect the operatives to progress toward higher standards of living or retrogress? Some thoughtless persons charge our Creator with just this lack of prevision and common sense—a lack that you would be ashamed to confess.

Again, suppose the factory were constructed all right and that it was properly heated, lighted, ventilated and stored with raw material awaiting the hand of the operatives, and that into it are turned ten thousand men of diverse natural aptitude for such work, but that they fail to find their blue prints or working directions. Of course, the men wouldn't make much that looked like stoves. Of this we may be very sure. But what would they do. Let us, in our imagination leave them to their own devices in the factory for a time and watch developments. Ah! One fellow has started a gambling joint in one corner upstairs. And see! One of them has opened a booze-joint in the room below. See the beautifully painted ladies that have found their way into the workshop! What is that noise? Some one shot? Yes—in the saloon—and the escaping villain is caught by the more orderly "employees" and placed in the cellar. And look, some of them are diseased and ill and the large room at the farthest end of the building has been turned into a hospital. But look at the man in the coal bin. By some sort of reasoning he seems to have convinced himself and some others that he owns all the coal. He says he saw it first. See the fellow on the iron pile. He won't let anyone have any iron unless they pay him handsomely for it. He says he saw it first, and that, therefore, it is his. Such a fuss and hubub is going on that it is hard to make out head or tail to the "enterprise."

Many are searching the factory bent on seeing something first, so that they can make the others "fork over" for it. See those monopolists rake in the cash! And note the airs they are putting on. A few have gotten hold of nearly all the factory through their seeing first the wealth it contains. But most of them have been less observant and have nothing but misery. Just as we might have expected, some of them have gone insane as a result of disease or worry or both, and that other large room near the front of the building is now being used for their convenience. There are about as many in this asylum as there are in the cellar. And there are twice as many in the hospital room as there are in both of the others. But what is that sonorous voice we hear? Oh! Some one said: "Let us pray." Most of them are praying. However, conditions don't improve much on that account. And what is that body of men in the blue print room doing? Listen! Oh yes—they are passing laws and regulations for the guidance of the operators—telling them how to do everything but make stoves, and telling them what will happen to them if they don't do as they are told. That they are in a stove factory and that they are there to make stoves hasn't occured to any of them. And they can not work out their destiny until they know what it is. Truly things in this factory are in terrible disorder. It would be hard to picture a more jumbled and confused mass of suffering humanity. This is a picture of life today on this sphere.

But see! Some one has discovered the blue print box and announces his discovery. "Rot,"

say some, "this is no stove factory." However, the discoverer of the blue prints insists that they bear some relation to the factory and to the people in the factory. The plans are tried and found to answer every requirement.

Let us look into the future, keeping our vision riveted to this factory. Gradually, very gradually, the leaven of the blue prints is working. The operatives, in ever increasing numbers, are using them. See them leaving the jail, hospital and asylum! The monopolists lose their monopolies and their "airs" at the same time. The expressions of misery on the faces of the many are changing to joy. Note particularly the excellent stoves they are making. And all this is due to the discovery of the blue prints!

Looking back in history a few hundred years we see Europe quarreling over such questions as, Is the earth round or flat? Does the earth move around the sun? Or does the sun move around the earth? We can see Galileo and Copernicus and Kepler being persecuted because they dared enunciate what they believed to be natural laws concerning these phenomena. We can see that of all their tormentors ecclesiasticism is the worst and the most unrelenting. The holy fathers could brook nothing that promised to interfere with the established faith. Later we see Newton discovering and promulgating the law of gravitation that explained the motions of the sun and planets; again we see the church up in arms to protect the faith and prevent any innovation, just as if the ark of truth could be

shaken by error. But the natural law discovered by Newyon held good, and the rantings, hysterics and persecutions of the ignorant after a time, subsided. Natural law came to the rescue—saved the day.

Looking again, we see alchemists, by incantations, invocations, prayer and secret processes, attempting to change base metal into gold. We discern that the people are almost wholly ignorant of organic and inorganic chemistry; and note their consequent inability to manipulate vegetable, animal or mineral matter. We see that they have no table knives, forks or spoons, and that they eat out of a common dish with their fingers! They have no nails or pins, wagons or plows; in short, they have scarcely more than their hands to work with. They are dragging out the merest existence. They are in the world but scarcely of it, as is their privilege. Again we see natural law coming to the rescue. Dalton of England promulgates the atomic law; alchemists see the folly of their attempts to change iron and copper into gold. Their faith in incantations receives a severe jolt. But more important, this atomic law was found to be the key that unlocks the doors of undreamed-of wealth in matter; and by its use people for the last century have been comparatively surfeited with useful and convenient things. How many of us here realize how much of our present comfort we owe to the discovery of this blue print—the operation of this law? There had been no telephones, no telegraphs, phonographs, electric

motors, steam engines or railroads without a knowledge of this blue print; and we would still be regarding earth, air, fire and water as the only elements. The half hour allowed for this paper will not permit me to portray further the beneficence that has followed in the train of our knowledge and use of this natural law.

Again we look and see men stretched upon dirty boards to which they are bound and hear them screaming in agony while others are performing what they call surgical operations upon them with dirty knives. There was no thought of disease germs as there was none of anesthesia to relieve the suffering of the patient. If he survived the terrible ordeal, it was the Lord's will; if he died it was likewise the Lord's doings, in which their prayers and incantations, they thought, played an important part. The surgeons of those days we see are the barbers, each with his advertisement consisting of the familiar red and white striped pole to remind possible patients that he was a bleeder and bandager. Their skill as surgeons, was hardly equal to their willingness to cut. But natural law comes to the rescue again. Anesthesia, discovered by Morrison, was introduced. Thanks to Pasteur, Koch, and other bacteriologists, patients' bodies, operating tables and instruments are now clean and antiseptic. The ancient and honorable calling of surgery and blood-letting no longer enriches the barbers. Who has the pen, or the tongue, to properly depict the multitude of horrors saved humanity by reading these two pages

of natural blue prints? But let us look again and we discern Europe being almost depopulated by the Black Death. We see Bubonic Plague, Smallpox, Yellow Fever and Syphilis carrying off their millions. And note the people who are not stricken. Some of them are unnaturally and hysterically gay, believing that that frame of mind will ward off the evil spirit that they imagine is inflicting them. Others are sad and gloomy beyond description, believing that the destroyer is appeased at the appearance of gloom and will spare them. Others are exorcising or propitiating this imagined evil spirit that is at their throats, in hopes that by thus putting up a fight against or completely surrendering to, it they will escape. How reading one chapter in the book of nature—a few pages of natural blue prints—has changed all this! These diseases have been robbed of their terrors, and epidemics of them are unknown in this day.

Let us look back once more, this time to a point about 140 years ago. We see the kings, priests, vested interests and stand-patters and the same enslaved people as before, excepting that the people are not such abject slaves as they were centuries previous. But they are still victims of conservatism and stand-patism. For the greater part they are obliged to obey laws in the making of which they have no voice. That great idealist and natural blue print reader, Thomas Paine, raises his voice and proclaims to all mankind that he has read in the book of nature that

all men are born equal and are alike possessed of certain inalienable rights among which are the right of life, liberty and the pursuit of happiness. Contemplate what this has meant to enslaved mankind generally, but particularly what it has meant to the people of France, to the people of the entire western hemisphere and even to republican China.

Now let us look at the world today. Everywhere we still hear priests, orthodox ministers, kings, vested interests and stand-patters generally exclaiming, "Hold fast to that which is good," knowing full well that their dogmas, creeds and precepts are not true and are good for them only in that they are the means for satisfying their greed for power and money. By all means hold fast to that which is good, but be sure that those things to which we hold fast are true. And then they must be good for all people. But the undercurrent of meaning of this historic slogan of these various conservatives is to "Hold fast." By all means "Hold fast," the proletariat is enjoined. When one is milking a cow it is bad enough to contend with flies and the occasional switching of the cow's tail. But let no man scare the cow. Therefore, down with the scientist.

All through history we see this historic conflict being waged between stand-patters on one side and a few courageous readers of nature's blue prints on the other. The slogan of the one

has always been "Hold fast;" while the efforts of the other have always been directed toward reading nature's laws first and then reading them into the lives of suffering humanity. The history of the progress of humanity is the history of the case that might be entitled Scientist versus King, Priest & Company, or, it might be entitled Jesus versus Ecclesiasticism. While there have been many so-called reformers who set up man-made abstractions as panaceas for human ills, there have been comparatively few real reformers. For real reformers, necessarily, I repeat necessarily, must be readers of nature's blue prints. Man can not work out his destiny if he knows not what it is.

Let us consider this point for a few minutes longer. Today in France there are twenty-seven political parties, each with a man-made scheme for alleviating the distress of that people. In every other country there are man-made schemes and schemes advocated for a like purpose for its particular people. In our own country over ten thousand laws were passed by the legislatures of the different states in 1913. Who is not weary of controversies over high protective tariff and free trade? Surely our statesmen have never known of that which gives impetus to real progress. Who among them is a reader of nature? From the dawn of history so-called statesmen have been chattering about laws and regulations for the guidance of people all unaware that law-making aside from routine is a fine art that transcends their utmost skill. They, to whom the Almighty has not entrusted the direction of

even their own digestive, respiratory and circulatory processes essay the role of lawmakers, forever ignorant that all, or nearly all, regulations necessary for the happiness of mankind were made before man's advent upon this globe. That the earth itself was made in anticipation of man's entry upon it and in anticipation of man's conducting himself as an orderly complement of it, has never entered their heads. And after all these years of so-called statesmanship, let us judge of the condition of affairs among men by referring to the Detroit Journal, published today. The following are some of the glaring headlines: "Fourteen shot in labor fight in Jersey," "The poor, the very poor, are robbed by state and public service corporations," "Frozen girl's parents to be taken to court," "Mlawa is wrecked, country devastated," "Artillery wrecks Polish town," "Snowfall gives work to jobless," "Bakers discuss bread advance," "Twenty face trial as outcome of mine strike war," and lastly "Bishops are called; will gather January 27th to consider coagitor for Bishop Foley." What a sad commentary upon man's abilities as a lawmaker. But this is from only one paper. It can be multiplied by ten thousand and still not even suggest the extent of human trouble. In this country today there are approximately 240,000 people in jail, 200,000 in insane asylums, 500,000 in hospitals. There are upwards of one-half million women of the streets in the large cities. Eighty-five men out of a hundred die without

leaving enough wealth with which to pay for their burial. But so as not to prolong this too much let us be reminded that Pasteur by reading nature and discovering the process that bears his name, has saved—mark you, saved—the lives, it is estimated, of more than four million people. Have all the legislatures and ecclesiastical synods that ever convened that much to their combined credit?

Is all this not a sad, very sad, commentary upon the regime of ecclesiastics, lawmakers and stand-patters generally? Surely the riches that have poured forth upon us when we have, so to speak, tapped nature by reading and following her laws, should inspire us with the utmost confidence in her. Lawmaking, except that providing for mere routine work in this great factory, implies the possession of infinite powers. It is an art the secret of which, like the secret of existence after death, the Creator has kept.

The poet was almost right when he said:

The world's a book, in folio printed all
With God great works in letters capital;
Each creature is a page; and each effect
A fair character, void of all defects.

But as young truants toying in the schools,
Instead of learning, learn to play the fools;
We gaze but on the babies and the cover,
The gaudy flowers and edges gilded over;
And never farther for our lesson look
Within the volume of this various book,

Where learned nature rudest ones instructs,
That by His wisdom God the world conducts.

With the help of Sir Isaac Newton's law of gravitation, man has, so to speak, put the sun and planets in order, without any help from legislatures. With the help of Dalton's Atomic Law man has put things in order, and enriched himself beyond calculation, without the help of any legislative body. It remains for man to put himself in order; and this can be done only as the other reforms were accomplished, namely, by reading nature's blue prints and adhering to them. Very little assistance from law-making bodies is necessary—at the most merely enacting nature's laws, or some of them, into statutes, and providing for a plan of operation or regime for this general factory, co-operatively owned and co-operatively operated.

The law of which I speak and of which I expect so much is of all things the easiest to comprehend. It is this: "Upon everything is written its purpose."

Hoping to prove to you the truth of this law I wish to call your attention to the following. It is apparent to all that eyes were made to see with, that ears were made to hear with, that teeth were made to chew with, and that every other organ of our bodies, whether artery, vein, gland, bone or blood, each has its function to perform. There can be no question about their purposes being written upon them. This is true

of all the organs of all other animal bodies. It is likewise true of all the organs of vegetable bodies, and of the bodies themselves. While this is evident concerning animal and vegetable bodies, organic matter generally, it may not be so clear to all that it applies with equal force to and is true of all inorganic matter. It is a fact that upon every animal body, vegetable body, and upon the earth, sun, moon and stars *purpose* is indelibly written.

Of course, it must be admitted that man, hampered by his own ignorance and by stand-patters generally, was late in reading nature's law of gravitation and likewise late in reading her atomic law. It is only a short time ago that man learned the function of the heart and the blood, and it is only as yesterday that the functions of the organs of plants became known to him. But his progress during the past 150 years has been phenomenal, and his acquaintance with nature's laws warrants him in stating without fear of successful refutation, that upon everything from an insect to a planet is written its purpose.

Let us examine just a few things and read the purposes written upon them. Here is an apple seed. I found it in the center or core of an apple, protected by little sheaths on all sides. As I bit into the core these little sheaths stuck between my teeth, causing a slightly disagreeable sensation; and the operation of biting was halted.

This seed is pear shaped, and is covered with a slippery substance. This slippery substance

and this shape make it difficult for my tongue to lodge the seed securely so that I can crush it between my teeth and destroy it. My inability to bite it would move me to spit it upon the ground. Its larger and heavier end would strike the ground first, and if the ground were soft, this larger end would make an impression in it and the seed would stand upon this end with the point sticking up. The color of a ripe apple seed—one that will reproduce its kind—is dark, the color of the soil. A real bird's eye view of the place where the seed was would not disclose much to a bird. Ripe apple seeds were not made to be eaten by birds or men. They have little food value. They were made to reproduce their species. Thus, the purpose of an apple seed is written upon it. And we might ask why is the apple round? Why not square? Round apples when placed in a pile keep in good condition for a reasonable length of time, because the air can circulate among them. How long do you think square apples would keep if placed in a pile with their square faces touching?

Consider the fact that trees grow up and not along the ground. Man must have timber, but he must have farms also. If all the trees grew along the ground, instead of in an upright position, how much room would there be for farms? And what of shade for himself and the lower animals and weaker plant life, to protect them from the scorching rays of the sun! And what beauty of landscape would be lacking! To fur-

ther economize space, trees are round, not square.

White pine timber yields an excellent lumber for the outside finish of houses. It stands exposure to the weather admirably. But it has an inartistic grain and its use as an inside finish for houses is not inviting. On the other hand, birch will last scarcely a year when exposed to the weather but it has a most beautiful and aritstic grain; and when it is used as an inside finish for houses or for furniture, it is at its best. It not only presents a most beautiful grain that will take an exceedingly high finish, but it will last for many years. If elm is used for building, it will warp and twist so that no amount of nailing will hold it in place. But it is wonderfully adapted for use as barrel timber and for the felloes of wagon wheels. So we may go from one kind of timber to another, and upon each will be found written its purpose.

Is it not remarkable that of all the metals, iron, bismuth and cadmium only, swell when cooling from a molten state? How would the molder fill the interstices of his mold and bring out the design of the pattern from which he works, if iron shrunk while it cools as do other metals? And what could be more suggestive of design in this regard than that iron, the most useful and mostly used metal, should be most abundant and most accessible? And again, it, in common with all other metals, is neither too soft nor too refractory for man's use but in

every way is suited to his powers of elaboration.

In the building arts, more than timber and iron are necessary. Stone was to hold a conspicuous place and especially artificial stone. And man is enabled, by the simplest of processes, to create this so-called artificial stone and to mold it to designs that suit his pleasure and his needs. By simply heating lime rock until the water of crystallization is driven off, it is easily reduced to powder. While in this powdered condition, sand or gravel and water may be mixed with it; and thus re-supplied with water for crystallization it will re-set and form an enduring stone of the whole mass. No one conversant with the facts will deny the claim that purpose is thus written upon limestone. This is equally true of gypsum rock and of many other cementitious minerals.

But let us for a few minutes, concern ourselves with the abuses rather than the uses of things that have played an important part in human destiny. For proper use of things, that is, use according to purpose impressed upon them, is full of beneficence; while misuse, that is, use not according to purpose impressed upon them, is abuse and sin. Such misuse is fraught with dire consequences to the misuser. Virtue is proper use and sin is the misuse of things.

A few years ago a committee composed of United States Senators listened to the testimony of upwards of five hundred manufacturers of the United States, to the effect that grain alcohol

was necessary in their arts. Over 1,500 uses of this commodity were testified to by these men. They, with one accord, stated that its use was indispensable and .that the manufacturers' tax should be taken off it so that they could obtain it at a less cost than they were then compelled to pay for it. But not one of them testified that it was necessary as a beverage. Presumably, these men kept their stocks of alcohol in glass, earthen or metal containers, because of its corrosive action upon animal tissues. Do you think that these men transcended the Creator in wisdom in this regard? Would He not have provided men with glass stomachs if He had intended them as alcohol containers? This "keep-me-warm-keep-me-cool" panacea for all ills is a boon to humanity, but its misuse has literally staggered mankind. Thus do the blue prints appear upon alcohol.

Tobacco is useful as a poultice, insecticide, errhine and as a germicide. In fact, blue prints are written all over the tobacco leaf. But there is no indication, that it was intended that tobacco should be smoked or chewed by men. Numberless experiences and experiments have proved this to be true. However, there are those who sincerely believe that its use in smoking pipes, etc., is beneficial. So just here let me say that in reading nature we may not always read aright since systematic inquiry is in its infancy. But our mistakes will be corrected by our successors and theirs by those who follow them. The chief consideration, at this time, is the

recognition of the law that upon everything is written its purpose.

What blessings have followed the use of opium and its derivatives! and likewise those of the betel nut, hashheesh and cocaine! How useful all of them have been in producing general and local anesthesia! The blessings following their proper use are equaled only by the curse following their misuse by drug fiends of the orient and the occident. Surely here again we find purpose written in unmistakable language.

In turning to the earth we find it spherical in form ever acting as a press of varying powers, a perfect contrivance for preparing inorganic materials for the elaboration of man.

When those materials are ready for him they are raised to points upon or near the surface within his reach by means of a caloric engine, evidences of the workings of which are called earthquakes and volcanoes. Thus these phenomena are signs of internal operations of this great factory and testify to its youth and virility; they are by no means omens of senility and decay. Matter is being constantly prepared for and placed within the reach of the mechanics who are to further elaborate it; hence the testimony of seismographs in all parts of the world that the earth is constantly quaking.

But let any one in whose mind this question has not arisen ask himself: "For what was this mass of materials made? To what uses was man to put them? or has he to do anything with

them?" No other animal has uses for timber and coal and clay, sands and metals. Were they placed here to serve no purpose whatsoever? Note further that only its skin-like surface can be used as a theater for his own work and for the raising of foods. Nearly the whole of it, is mineral matter. It was not intended that it should be a mere pantry or victualing institution. The elaboration of inorganic materials found in and upon the earth is man's chief duty. The earth is full of them. In the storage of them we find that they are not indiscriminately mixed together. Between each bed of coal and sand and clay is a platen of rock to keep them separate. As a rule, the lower matter is located in the earth the harder and more adhesive it becomes. So far as we know, granite, the hardest rock, is found at the bottom. When the materials above it are ready for further elaboration, this rock, the strongest of all rocks, acting like the piston of an engine, receives the impact from the upheaving force and bears all superincumbent materials to points upon or near the surface. Thus this internal caloric engine does its work of elevating. This is a thoroughly mechanical and practical arrangement. For if a soft material were at the bottom the upheaving force would tear through and render all a confused and disordered mass. Suppose one of these forces only were exerted upon matter, it

would on the one hand be squeezed to incalculable hardness or on the other hand it would expand into a gaseous sphere, the outer edges of which would reach beyond our most outlying planet.

But all material is not mineral or vegetable or animal; all are found in abundance. Any one, or any two of them would not suffice for the needs of a general factory. And while heavy inorganic matter, iron, for instance, usually is found adjacent to coal for melting it and limestone for a flux, so that it can be elaborated upon the spot and products only of it transported, we find that many places do not abound in iron. But these other places furnish other commodities lacking but needed in the former. Thus the distribution of the raw material upon the face of the earth suggests a plan of exchange of commodities. And in this connection it is interesting to note the system of water-courses upon the earth, the rivers and oceans, upon which man can so easily find his way. Intercourse among the peoples of the earth is apparently a part and parcel of the great design of the Creator.

We find beds of sand, gravel and clay; we find rock in enormous masses from which man can blast off pieces of any required size; but metals are not found in masses in their pure state. Iron, for instance, is found as an ore, that is, mixed with other elements that assist man in its elaboration. What could man do with a large body of pure iron? If it were not found

impossible to use it at all, the time spent in chiselling it or drilling holes in it so that it could be blasted, would render its use prohibitive. Metals are found as ores upon the surface of the earth or embedded in rocks, in thin streaks or veins. No means has yet been found to make use of the masses of pure copper sometimes found upon the shores of Lake Superior.

In the elaboration of this matter power is necessary; and has man the power in himself, or at his disposal? Undoubtedly! We find him equipped with physical strength; which was all he used in his earliest days upon this earth. Later we find him using animal power, then windmills, steam, electricity and gasoline power. But think of the almost incalculable power to be had from the water falls upon the face of the earth.

Men do not erect costly factories to abandon them before even the stock on hand is worked up. This earth is no temporary structure or working shed. It has cost too much, its foundations are too solid, its stock of unwrought materials is to great, and its forces too youthful and virile to admit of the conclusion that it is, as some think, in the last stages of decay and about to be destroyed.

This earth is not a mere stopping place for a few weary nights and days while on some indefinite spiritual journey from somewhere to somewhere in the sweet bye and bye, as ecclesiastics would have us believe. It is our home; and

every feature proclaims it a factory home, heated, lighted and ventilated and stored with raw materials awaiting our elaboration. And that other planets also are factories is evidenced by the aerolites that fall upon the earth. In every way they correspond to matter on this globe. The iron in them melts at the same temperature as does iron on this planet; the metallic alloys found in them are the same as those upon this earth; and the quantity of iron found in them is in excess of all other metals in about the proportion that it exceeds other metals on this sphere.

Nature, proclaims the universe an infinite series of manufactories, and proclaims the Creator to be, so to speak, a hard-headed, practical and tender-hearted mechanic.

But a factory, never so well equipped with raw materials and power, would be useless without operatives to furnish the hand labor and the brains, to direct the manufacturing. And so we find it; this earth is a great general factory and man is the operative. No other creatures upon it care about the greater part of it nor have use for it. What use have they for iron or coal or oil or timber or navigable bodies of water, or systems of water-courses? That man is the intended operative is evident from his instincts. Note how mere boys delight to make wagons and toys and ride horses and are deeply impressed by the exhibition of mechanical power. When still young, the spirit of wanderlust

seizes most of them. How would the different departments of this great factory be inhabited by mankind, but for this desire implanted in youth to travel to distant parts and see and do? And while boys are running away from home or making mechanical toys, in imitation of the larger instruments of manufacture used by their elders, the girls are nursing dolls in the development of the maternal instinct that is to keep the factory perpetually supplied with mechanics. Again, it is worthy of note that even man's loftiest and most ideal conceptions are expressed in mechanical terms. Even his most beautiful hymns are couched in mechanical phrases, for instance, 'How firm a foundation," "Nearer My God to Thee,' "Let the Lower Lights be Burning," "Lead Kindly Light.'

But in nature's limited elaboration of matter, coinciding so perfectly as it does with the design of making man a workman in it, there is much that is pregnant with meaning. Nature has brought it to a certain state of elaboration and then stopped, because at those points his efforts were to begin. All things necessary for him above his capacity or powers to produce were provided, but unwrought or partially wrought materials were given him because the ability to mould them to his wants and wishes was imparted. Had it been otherwise, metals had certainly been dug up in the forms of necessary instruments, vegetable fibre had grown in woven garments, glass and stoneware had

been quarried, and boulders had been cubes ready for the builders' hands; while joists and boards and furniture had been the natural fruit of trees. No fact is more prominent in nature than that man was to have nothing—absolutely nothing—done for him that he could possibly do for himself. This was essential to the development of his character as an artificer. By it exertion became inevitable, while the direction it was to take was not to be mistaken. Nature has provided man with coal, but he must dig it. She has provided him with metals but he must mine, smelt and refine them. She has given him trees but he must fell them and saw them into lumber. He has been given wheat, but he must sow it, garner his crop and prepare it for his pantry. Many think that man cannot touch the works of nature without marring them, but the truth is that nothing in nature in the way of man's necessities, falls into his mouth. Everything necessary for him is the subject of work, elaboration and improvement.

Born in this factory with the instincts of a mechanic, brought up in it, confined for life to it—a true factory child—what else should he do than imitate the great artificer by thinking His thoughts after him, reading His blue prints?

Let us now turn to man himself and see if his form and structure do not indicate the nature and purpose of his being. Other animals need their limbs for locomotive purposes while he has two hanging from his shoulders that are not thus called upon. These arms and hands spe-

cifically proclaim him an artisan. Note the termination of his hands in his fingers, and the apposition between his thumbs and his fingers. These thumbs are in utility, second hands. Were it not for them man had been a failure as an elaborator of matter. His nearest analogue, the monkey, has rudimentary thumbs but they are located high up on his writs and between them and his fingers there is no apposition. Therefore, the monkey can have no more control over matter with his hands than can a man who has his thumbs cut off. Note again that a man has heels and can sustain himself in an erect position. Monkeys cannot do this. This circumstance together with a great variety of others proclaim man the lord of creation. As no general factory can be carried on without a diversity of operations, requiring a diversity of talents, we find mankind fully equipped, and equal to the task, in this regard. No two men are of the same mental calibre. And furthermore, in a general factory of uneven temperature upon its surface, operatives capable of surviving under those various temperatures are necessary. So we find the lighter and fairer races in the northerly sections of this factory and with hair upon their heads that lies compactly togeather. Their light complections furnish protection from the cold. White absorbs heat while dark colors radiate it.

All nature in the Northern climes is, in winter, slumbering under a mantle of snow, or

dressed in a white fur coat or enjoying a warm light complexion, while in the warmer climes we find her in darker hues. The factory operatives of the South with dark complexions are in turn protected from the rays of the tropical sun. They have not closely matted hair upon their heads, but as their crowning glory we see them decorated with black kinky wool. Wool is a non-conductor of heat and the kinkiness of that upon their heads permits a free circulation of air, while their dark skins radiate and throw off the heat.

And what is more significant than the fact that no means are provided for laying up a stock of goods for future generations. Each generation must labor for itself. If bees, for example,could lay up a store of honey sufficient to supply their young through life so that no labor upon their part were necessary, the species would become extinct. This is true of mankind also.

The working blue prints for man's direction were prepared when the factory was being built, long before his advent into it, and he is but a complement of those previously made plans. Laws for his government having been made, no need exists for his making any, and therefore to him was not imparted the ability to make them; hence his pitiful failure in this regard.

Everything is in keeping with the idea that this earth is a general factory, heated, lighted, ventilated and stored with the raw materials

awaiting man's elaboration, with blue prints at hand which he is able to decipher. By no stretch of imagination can this earth be viewed as a court for lawyers, a Congress for so-called law makers, a parlor for idlers and people of fashion, a bank within which men are to paw over money, or a theatre for war. It is surely an insane idea that prompts men to view the deposits of natural wealth as belonging to a man or company of men. Cooperative ownership and cooperative effort are everywhere proclaimed.

The oil monopoly can with as good a show of justice claim all the fish of the sea whose oil, at some future time, will be pumped to the surface as petroleum, as claim the stock of oil now in the terrestrial tanks.

The coal and metal monopolies may with as good a showing of justice claim all the coal and metal now in the making in the earth's alembic and also pre-empt the caloric engines used to raise them to the surface whose noisy operations we call earthquakes, as to claim the coal and iron already in the vaults of the earth.

But why should they not do something worthy of their powers of "seeing first?" Why not claim the sun to the warmth of whose rays oil and coal alike, are due?

Alas! Nothing is perfect and we find the monopolists, as all others suffering from lack of "vision" or possessing it lacking the courage of their convictions.

publicly owned and operated utilities, post-office systems, police systems, public schools, fraternal societies, insurance companies, trade-unions all proclaim that the instinct of brotherhood is within man. His real difficulty is not in recognizing brotherhood as a thing to be desired but in defining brotherhood and working it out in practice. Natural law supplies both answers. It is hard indeed to define a brotherhood that is both competitive and co-operative.

All civilization and degrees thereof, from that of the savage to that of the most highly developed of mankind, is written in elaborated matter. The stone axe of the man of the stone age proclaims his knowledge of the elaboration of matter, his standard of civilization; while the steam engine, the wireless telegraph, the electric motor and a thousand other things bespeak the standard of civilization of a large part of mankind today; and if we were to ask the veriest stand-patter or conservative, for evidence of man's advancement from a savage to an enlightened state, would he recite the Apostles Creed? Or would he call attention to these same engines, telegraphs and motors? If some power were to lift from the planet all the elaborated matter upon it and take away from man the knowledge of elaborating it, leaving only the Apostles' Creed for his use, delectation and delight, how far back in the scale of actual development would man be placed?

There is one other circumstance concerning matter that is worthy of consideration at this point. The concensus of opinion of the leading scientists of the earth, notably that of Sir Oliver Lodge, is that the ultimate unit of so-called matter is not matter at all; that electrons or units of force, are the ultimate unit, and that these vibrate so rapidly that they, in great numbers, take upon themselves mass or form. At this point scientists hesitate, but are almost ready to declare that this ultimate force is spiritual force. Must we stop here and leave it an unsolved conundrum? Do the last rays of the light which we have spend themselves here? No! There stands just here, where material and spiritual seem to meet, a great beacon of light. Jesus, the greatest seer that ever lived, speaking for his entire self, material and spiritual, said "I, a man, and my Father are one." Thus do we see that the whole is spiritual. Whatever there may be to distinguish electrons —those ultimate units of force that we call matter or say, congealed spirit—from pure spirit, it is true that pure spirit wells up within us and "renews our strength like the eagle's," when we seek, ask and knock, for it. While this seeking, asking and knocking for spiritual strength are as imperative as is effort generally in this factory, it is true that no man ever did or ever can seek, ask and knock, that is, sincerely invoke the aid of the spirit without receiving the evidence of it at once and without

any previous preparation or probation. The earnest desire and the seeking, asking and knocking are the open sesame of the spirit.

It is worthy of note that this spiritual force manifests itself in the shape of vibrations, seemingly emanating from the spinal column and radiating over the entire anatomy. Vibration seems to hold a very important position in the so-called material and spiritual economy of the universe. As an illustration of the adjacency of the spirit to mankind I call your attention to the water-works of this city which exerts a substantially equal pressure upon all the water pipes of this city. When you are about to water your lawn you attach your hose and make very sure that there are no kinks in it to prevent the flow of water. Kinks in the hose prevent the flow, the outer end remains unfilled and flabby, so to speak, and the grass receives no blessing. So it is with us. If we surrender ourselves by placing ourselves in line with the flow of the spirit, removing the kinks, we and all about us are abundantly blessed by the presence and the flow of the spirit. Viewing the fountain and the flow of the spirit in this way, and after trial knowing full well what a source of strength it is, how sad it is to see myriads of people attempting to draw spiritual strength from what is in reality, a mere deduction. Orthodox Christians go through a mental performance or deduction such as the following: Christ was divine, therefore all powerful, all wise and

beneficent; therefore he will, knowing my needs, supply them; therefore I will ask him to do so. There is no more strength in this deduction than there is in the multiplication tableThe Jews have transcended all other races in the production of geniuses,for the reason that for centuries they have had their spiritual lips pressed against the real spiritual fountain, this fountain of strength. The greatest emphasis has been placed by them upon At-One-Ment with the Spirit. They will have nothing to do with the doctrine of Atonement. To them religious exercises are feasts at this source of strength; and they have grown strong, while other races have, as a rule remained spiritually anaemic, never having had anything to suckle but something akin to the multiplication table. The Spirit is an actual source of power, not an abstraction. There are few stand-patters among the Jews. In passing it may be well to call your attention to the fact that this same spiritual power widened and deepened their patriotism into humanitarianism. They lost for all time national cohesiveness and gained true spirituality. As a race, they do not desire a country of their own and in fact never can shrink their humanitarianism back into patriotism. This is true of liberals generally.

Again, since this is a general factory in which man is to work with his hands and brain, in cooperation, how sad it is to see monks and the

like perched high up on barren cliffs, spending their time as far away from the workshop as possibl , imbued with an idea that all earthly things are filthy and therefore not deigning to take part in the predestined work of man. What shall we say of these poor deluded living spooks who are in the world but not of it? And what could be sadder than to view the Brahman and the Hindoo torturing and mortifying his flesh in his attempts to rid himself of his body and thus find Nirvanna by crawling out of this workshop back into the spiritual womb? How insane are all these ideas of asceticism and set-apartness! And what is true of these men is equally true of all other men who neglect and refuse to actually labor co-operatively with their hands and brain, whether they be kings, priests, lawyers, statesmen, people of fashion and idleness, or soldiers. Not one of them is in line with the spirit. They, and most others, have kinks in them that prevent the flow of the spirit and prevent them from reading the the spiritual or natural blue prints, without which life is largely an exercise in foolishness.

I wish you to contemplate mankind thus drinking the spirit so that his strength is renewed like the eagle's, reading the blue prints and working according to them, with no thought of storing up money! Man's full duty to himself and to the beneficent spirit is comprised in thus Drinking, Reading and Working. Who will attempt to picture the happy condition of

humanity that will follow the promulgation of this law; "Upon everything is written its purpose." Man has, so to speak, put the heavens in order; he has, so to speak, put things in order; now, let him put himself in order.

In this law is scientific truth, pure religion, pure democracy, justice and brotherhood. In its light all are found to be one and the same thing. And man needs only to "strike the rock" for it to gush forth and deluge him with beneficence.

The automobile, is a means whereby many who previously never gave the subject a thought, are becoming interested in man's chief occupation upon this earth, mechanics. The general advent of machinery in great volume presages much that is good for man in that it interests him in the great subject at hand—is getting him on the right track. Let him become triumphantly conscious of the fact that he is getting upon the right track!

It must not be denied that abstract laws, creeds and dogmas have served their purpose. It must be admitted that there are many minds that require, for their control, iron-clad regulations or dogmatic statements. It must be borne in mind also that ecclesiasticism and standpatism generally are not to be criticized too severely. These stand-patters feed on ignorance with which mankind generally is abundantly supplied. Ecclesiasticism and governments generally merely reflect the minds of the people,

and are their creatures.

Let us not be dismayed because we cannot see the great final purpose of all that is. It may be that the pleasure which Mother Spirit takes in the act of expression accounts for all. But a tea cup cannot hold the ocean, much less can the finite mind of man comprehend the Infinite. It is manifestly nonsense to try to do so. We are limited in every way. Upon every side we run against "stone walls," so to speak, past which we cannot go. We cannot ascend more than about 20 miles on account of the cold and the rarity of the air. We cannot descend more than about 2 miles on account of the internal heat of the earth. Our sphere of activity is, practically, on the surface of the earth. So it is with our mental life. For here again we are limited. We cannot ascend or descend very far. We have, it is true, dug deep enough so that at last we realize that all is spiritual. Farther than that our most daring spiritual scout, Jesus, has not gone. But we have within these limitations, or rather what appear now to be limitations, a vast field for living. There can be no just cause for complaint upon this score. We are, as it were, upon an island that has emerged above the surface of the seemingly limitless spiritual sea. From this vantage ground we can look about us and abroad and infer from what we learn by our observations the probable character of that part of the infinite that does not come within our range of vision. Let us not com-

plain, we have ample room for all healthful work, love, play and worship, the things that men live by. But to work right, to play right, to love right and to worship right we must Drink of the Spiritual power, Read the blue prints and Work according to them.

Civilization is built around the scientific labor of a few men. Jesus, Galileo, Copernicus, Kepler, Newton, Stephenson, Thomas Paine, Dalton Lavosier, Ericcson, Field, Darwin, Priestly, Liebig, Bell, Koch, Pasteur, Lodge, Crookes and Edison stand out prominently among this number. And what are scientists? Scientists are readers of Nature's blue prints. These men read nature for themselves and then read it into civilization, thereby uplifting it. They are the real princes of God's kingdom on this earth.

The sciences have been, almost to the present time, like little insolated hillocks dotting the surface of human research. The underlying truth to which all are tributary has been seen clearly only of late. Each science rests upon observations from which are induced its general truth; and these sciences in turn form the grander observations from which is made the grander induction that points to the homogeneity of the whole and to the almost bewildering beneficence and wisdom of the great spirit that underlies all.

Over this scientific course, piloted by Jesus, Lodge and others we may find our way to the very fountain of Spirit, against which we need only sincerely press our spiritual lips, open our natures and ask, in order to have a real spiritual experience and have our strength "renewed like the eagles" as was that of the prophets of old.

This is the way over which the Jews groped their way in the long ago. Then it was a mere blazed trail. But "narrow is the way" cannot longer be said of this road to the spiritual fountain. These princes of God's kingdom on this earth, have broadened and beautified this trail into a passable road that eventually will become a great highway---a boulevarde--- a pleasant way along which all mankind will travel eagerly.

These natural blue prints are the fundamentals of individual, national and international peace, plenty and happiness. They are, at once, the definition and modus operandi of brotherhood and humanity.

The hope for the future lies in our children. Their minds are plastic and impressible. To do the greatest good possible in the shortest time, it is our plain duty to make the study of the natural sciences and particularly the philosophy of these sciences, a hard and fast part of the curriculums of our schools. The homogeneity of the whole will testify to their minds of the wisdom and beneficence of the spirit. They will learn to Work and Read and Drink of

the spirit cheerfully and with avidity. In time the whole mass of humanity will be leavened in this way, and the monotonous rythmic routine of life, that spells drudgery, will be supplanted by a healthy staccato of individual initiative.

Among the various systems of government we see Anarchy (from two Greek words, an, meaning no, and arche, meaning head) upon one extreme and despotic monarchies (all head) upon the other. Our government is neither one nor the other, but a compromise between the two. It is better than a despotic monarchy and monarchies in general, because our forefathers, guided largely by Thomas Paine, wove into its warp a good deal of the woof of nature. In judging governments and civilizations this is the test: How much of the woof of Nature has been woven into their warp?

Nothing has ever lifted humanity but Nature. Nothing has ever degraded mankind but "unnature."

The 64,000 man made abstractions called laws, passed by the legislative bodies of this country in the last 15 years do not promise much in the way of human uplift.

Our legislators and statesmen are mere children. The real men of the world are the scientists, teachers and laborers.

In offering this to you I have attempted to reach your heads only—not your hearts. Every observation I have made any other person may make with vision unclouded by sentiment. It remains for you to garnish them with feeling to

your heart's content.

These views of the natural blue prints, made by the head are the stuff our hearts' highest, purest and practical ideals are made of.

Let us become obcessed with nature in all her spiritual loveliness and beauty and lay our plans accordingly.